PATENT APPLICATION

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Lester LUDWIG et al.

Application No.: 09/072,549

Filed: May 5, 1998

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#Suppl Response 1-28-01 A.T.

Group Art Unit: 2153

Examiner: D. Dinh

For: MULTIPLEXING VIDEO AND CONTROL SIGNALS ONTO UTP

SUPPLEMENTAL RESPONSE

ATTN: BOX RCE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Applicants submit this paper in response to the Examiner's Advisory Action dated December 6, 2000, and in connection with a Request for Continued Examination (RCE) being filed concurrently herewith.

In the Advisory Action, the Examiner stated that Applicants' arguments filed on November 17, 2000 were not persuasive. It appears that the Examiner, in continuing to read the claimed invention on the Verhoeckx et al. reference, questions the extent to which Applicants have disclosed how to transmit TV-quality video over UTP. Specifically, the Examiner questions whether Applicants have disclosed this feature to any greater extent than is disclosed or taught by Verhoeckx et al. In response, Applicants present the following.

Initially, Applicants note that the Examiner appears to have given no weight to the numerous statements in the application regarding the recognition of the problem of transmitting TV-quality video over UTP, nor to Applicants' assertions in the application that the present invention

solves this problem. As will be detailed below, there are indeed numerous places in the specification where the problem is identified, and its solution set forth. Given the absence of any reasonable teaching or suggestion in Verhoeckx et al. regarding the problem or the solution, Applicants submit that the Examiner's position is misplaced.

Moreover, Applicants submit that the present application does provide disclosure, far in excess of that provided in Verhoeckx et al., so as to enable one of ordinary skill in the art to transmit TV-quality video over UTP. In particular, as Applicants will discuss in detail below, and as discussed in the Declaration of Lester F. Ludwig, one of the named inventors of the present application, the transmission of TV-quality video over UTP is accomplished, *inter alia*, by following Applicants' teachings of a teleconference system having an Audio/Video (A/V) transceiver as described, for example, in FIG. 19 of the application.

As additional evidence of the requisite detail set forth in the present application, Applicants point out some of the relevant portions of the present application, and also provide evidence that one of ordinary skill in the art actually constructed a device for the transmission of TV-quality video signals over UTP, using no more than the teachings of the present application, and the knowledge of the ordinarily skilled artisan.

1. The Disclosure of the Present Application Far Exceeds that of Verhoeckx et al.

The Ludwig Declaration describes the portions of the present application which provide the disclosure, missing from Verhoeckx, from which the ordinarily skilled artisan could facilitate the transport of TV-quality video over UTP.

In FIG. 19 of the present application, A/V transceivers 840 are shown having Video Out 841, Video In 842, Audio Out 843, and Audio In 844. Ludwig Decl., para. 8. FIG. 19 further

shows that A/V Transceivers 840 further comprise port 845, which is ultimately connected to A/V Network (UTP) 901. Ludwig Decl., para. 8.

The present application also describes input and output of video signals through an A/V transceiver. Specifically, the application notes that video signals are passed as input into A/V Transceivers 840, and that A/V Transceivers 840 transform these video signals from standard video cable signals to UTP signals (Specification, pg. 23, para. 3). Ludwig Decl., para. 9. The A/V transceivers 840 then send the UTP video signals, via port 845, onto AV Network (UTP) 901 (Specification, pg. 23, para. 3). Ludwig Decl., para. 9.

The present application further describes how an A/V transceiver processes video input. In a fashion similar to video output, video signals are received from AV Network (UTP) 901 through port 845 of A/V Transceivers 840 (Specification, pg. 23, para. 5 to pg. 24, para. 1). Ludwig Decl., para. 10. The video signals are then passed through A/V Transceivers 840 and sent out Video Out port 841, so that the video signals may ultimately be received by some display mechanism (Specification, pg. 24, para. 1). Ludwig Decl., para. 10.

Applicants further note that the use of UTP wiring for video signal transmission is specifically referred to in the present application. For example, workstations are described as communicating with LANs via commonly installed 4-pair UTP telephone wires, wherein one pair is used for incoming video with accompanying audio multiplexed in, another pair is used for outgoing multiplexed audio/video, and the remaining two pairs are used for carrying incoming and outgoing data (Specification, pg. 10, para. 3). Ludwig Decl., para. 16.

Specific examples of UTP wiring formats that may be used by the workstations also are described. The present application specifically notes that a 10BaseT Ethernet uses RJ-45 pins 1,2,4,

and 6, leaving pins 3, 5, 7, and 8 available for two A/V twisted pairs, and that the resulting system is compatible with standard (AT&T 258A, EIA/TIA 568, 8p8C, 10BaseT, ISDN, 6P6C, etc.) telephone wiring (Specification, pg. 10, para. 3). Ludwig Decl., para. 17.

A/V transceivers 840 are also described in the application as potentially also having muxing/demuxing facilities to enable the transmission of audio/video signals on a single pair of wires (Specification, pg. 25, para. 1). Ludwig Decl., para. 18. The application even gives an example of how muxing/demuxing may take place, by noting the ability of the A/V transceiver to encode audio signals, digitally, in the vertical retrace interval of the analog video signal (Specification, pg. 25, para. 1). Ludwig Decl., para. 18.

Based at least in part on the above-identified portions of the present application, Applicants submit that the present application discloses not only the concept, but also the implementation of transmission of TV-quality video signals over UTP. Ludwig Decl., paras. 14, 19.

In addition to what is shown in the present application, it is well known in the art, as evidenced by U.S. Patent 4,800,344, (the "'344 Patent) issued January 24, 1989 to Graham, to use common mode filtering to improve line transmission quality, and hence bandwidth or capacity of a transmission line. Ludwig Decl., para. 3. Coupled with the description in the present application, the ordinarily skilled artisan would be well able to build a system which transmits TV quality video signals over UTP. Ludwig Decl., para. 19.

Clearly Verhoeckx et al. discloses none of this. Moreover, given what is disclosed in Verhoeckx et al., adding the Graham teaching to that disclosure would not provide the requisite detail for the ordinarily skilled artisan to construct a system to transmit TV quality video over UTP. Ludwig Decl., para. 2.

2. The Disclosure of the Present Application Is Sufficient to Enable a System Which Transmits TV-Quality Video Over UTP

Moreover, as Dr. Ludwig discusses in his Declaration, as of the effective filing date of the present application (October 1, 1993), one of ordinary skill in the art constructed a device to transmit TV-quality video over UTP, based on no more than the teachings of the present application, and the '344 Patent. Ludwig Decl., paras. 11-14).

Looking at this point in more detail, prior to the effective filing date of the present application (October 1, 1993), the co-inventors of the present application, Dr. Ludwig and Mr. Lauwers, conceived of a system that included the transmission of TV-quality video signals over UTP. One aspect of the conceived system included Dr. Ludwig's recognition that one could use a common mode filter, such as the one disclosed in the '344 Patent, to improve line transmission quality so as to enable the kind of bandwidth over UTP that is necessary to transmit TV-quality video signals. Ludwig Decl., para. 3. Experiments conducted between the conception date and October 1, 1993 verified the concept. *Id*.

After Dr. Ludwig's conception, Dr. Ludwig had discussions with Mr. Graham, the named inventor of the '344 Patent, relating to the video transmission capabilities of the circuit disclosed in the '344 Patent. Ludwig Decl., para. 4. In one of these discussions, Dr. Ludwig told Mr. Graham that the common mode filter disclosed in the '344 Patent could be used as part of a design to enable the transmission of TV-quality video signals over UTP. *Id.* After these discussions, Mr. Graham later informed Dr. Ludwig that he had licensed video applications of the '344 Patent to Mr. Dan Nitzan. *Id.*

After Mr. Graham told Dr. Ludwig about the license agreement that he had with Mr. Nitzan, but before October 1, 1993, Dr. Ludwig held discussions with Mr. Nitzan. Ludwig Decl., para. 5.

At the time of these discussions, Mr. Nitzan had started Network Video Technologies, Inc. (Redwood City, California). *Id.* During these discussions, Dr. Ludwig told Mr. Nitzan that the teachings of the '344 Patent could be used as part of a design to enable the transmission of TV quality video signals on UTP. Ludwig Decl., para. 6.

The substance of Dr. Ludwig's discussions with Mr. Nitzan that relate to the present invention amounted to no more than what is disclosed in the present application and the disclosure of the '344 Graham Patent. Ludwig Decl., para. 7. Furthermore, the relevant substance of what Mr. Graham disclosed to Mr. Nitzan regarding the video transport capabilities of the circuit described in the '344 Patent amounted to no more than what Dr. Ludwig disclosed to Mr. Graham. Ludwig Decl., para. 7.

Some of the relevant aspects of the present application that Dr. Ludwig related to Mr. Nitzan are illustrated in FIG. 19 and discussed in the accompanying specification (as noted above). It should be noted that Dr. Ludwig did not disclose to Mr. Nitzan the details relating to muxing/demuxing (Specification, pg. 25, para 1.) nor the details relating to UTP wiring formats utilized by workstations of the present application (Specification, pg. 25, para. 1). Ludwig Decl., para. 15.

After Dr. Ludwig had his discussions with Mr. Nitzan, and of course after the inventors' conception, but prior to the effective filing date of the present application (October 1, 1993), NVT produced an A/V transceiver, the NVT Model 518A Video Transceiver. Ludwig Decl., para. 11. The transceiver, which was billed (per the advertisement attached to Dr. Ludwig's Declaration) as transmitting TV-quality video over UTP, was made available to the public prior to the effective filing date of the present application. *Id.*

According to Dr. Ludwig, Mr. Nitzan was one of ordinary skill in the art, who was able to use his knowledge, combined with what Dr. Ludwig disclosed to him (as noted above), to construct the Model 518A Video Transceiver. Ludwig Decl., para. 14.

Pursuant to the foregoing, Applicants believe it is clear that the present application, well beyond what Verhoeckx et al. discloses, teaches not only the concept, but also the implementation of transmission of TV-quality video signals over UTP.

Now, although the Model 518A Video Transceiver was available to the public prior to the effective filing date of the present application, it is not prior art to the present application. The primary reason is that, as Dr. Ludwig states, the conception came before his discussions with Mr. Graham and Mr. Nitzan, and therefore came before the public availability of the NVT Model 518A Video Transceiver. Ludwig Decl., paras. 3, 5, 11.

Applicants submit further that none of the prior art on which the Examiner relies, including Verhoeckx et al., enables, teaches, or suggests any kind of system which is capable of transmission TV quality video over UTP. Furthermore, none of the other references of record, such as Tompkins et al. (U.S. Patent No. 4,847,829) Ramanathan et al., or Rangan, teach this deficiency in Verhoeckx et al. Therefore, Applicants submit that none of the cited references teach or render obvious the claimed invention.

Applicants note further that a review of the file for this application, subsequent to the Advisory Action from the Examiner, revealed the inadvertent omission of the Graham and NVT references from the IDS previously filed in the present application. To rectify this inadvertent omission, Applicants submit herewith an IDS listing these references.

The Examiner's rejections having been overcome, Applicants submit that the subject application is in condition for allowance. The Examiner is respectfully requested to contact the undersigned at the telephone number listed below to discuss other changes deemed necessary. Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

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